grasses, *Streptochæta,* in Guatemala. The species proves to be *S. sodiroana* Hack, described from Ecuador, the determination having been confirmed by Professor Hackel himself:

> This is by no means an isolated case of the occurrence of identical species in Ecuador and Guatemala, but it has peculiar interest from the marked character and rarity of the plant concerned (p. 50).

T. D. A. COCKERELL
UNIVERSITY OF COLORADO

CURRENT NOTES ON METEOROLOGY AND CLIMATOLOGY

MONTHLY WEATHER REVIEW

Nos. 5 and 6, *Monthly Weather Review,* 1907, contain the following articles of the most general interest:

"Guilbert's Rules for Weather Prediction," by Dr. Oliver L. Fassig. Guilbert prepared a paper for the competition organized by the Belgian Astronomical Society, "in order to bring out the present state of the art of predicting the weather."

"Principles of Forecasting the Weather," by Gabriel Guilbert, of Caen. This sets forth the method followed by the writer, which is based on the principle of the *normal wind.* Those who are interested in weather forecasting, either practically or theoretically, will find this discussion worthy of serious attention.

"The Relation of the Movements of the High Clouds to Cyclones in the West Indies," by J. T. Quin; a further contribution to the discussion by the late Father Benito Viñes, prepared for the Chicago Meteorological Congress of 1893.

"Memorandum on the Gulf Stream and the Weather," by Professor Abbe; a sane statement of the extent to which the Gulf Stream does *not* affect our weather.

"The Cold Spring of 1907," by Professor A. J. Henry; a review of the weather map features which produced the cold weather of last spring, coupled with the following: "The underlying causes of the recent cold weather are probably obscure and deep seated."

"Value of Weather Forecasts to Natural Gas Companies," in which the importance of forecasts of colder weather, with increased need of gas, is emphasized.

"Tornado at Wills Point, Texas, May 25, 1907," illustrated by two snap-shot photographs. Such photographs, although still rare, are fortunately becoming more numerous.

"Relations of the U. S. Weather Bureau to the Railroad Man," an address delivered by H. W. Richardson, local forecaster at Duluth, Minn., before the Northern Railway Club; contains notes on many interesting phases of the relation between weather and railroading.

"Legal Decisions as to Cyclones," being the opinion in full, of Judge Philips, of the United States Circuit Court of Appeals, Eighth Circuit, Minnesota.

"Hythers and the Comparison of Climates," by W. F. Tyler; a discussion of the question of sensible temperatures.

"Foehn in New South Wales," an extract from an account published in 1837.

"The St. Swithin's Day Fallacy," by J. H. Morrison. "It would seem to be almost useless to say anything further regarding the absurdity of the old superstition, with such an array of tell-tale figures all set against the legend."

"The Santa Ana of California," quotation from Professor Geo. E. Hale (*An. Vol. Carnegie Inst.,* 1906).

"Equinoctial Storms," by Professor E. B. Garriott. "There is no one special storm to which the term '*the* equinoctial' should be applied."

FORESTS AND RAINFALL

DR. J. SCHUBERT, director of the meteorological section of the Prussian Forestry School at Eberswalde, has recently published the results of his continued studies on forest influences in two papers. In one of these ("Der Niederschlag in der Setzlinger Heide," 1901–5; *Zeitschr. f. Forst und Jagdwesen,* 1907, No. 8) it is pointed out that of seventeen stations in forest, on the forest edge and in the open, the forest stations show a greater precipitation (1901–5), and the stations in the

open show the least. Corrections for snowfall and for difference in the exposure of the gauges as regards wind, amount to 5.5 per cent.; the observed difference in catch being 5.2 per cent. It thus appears that, as has previously been the case when the conditions of forest rainfall have been critically examined, the probability of error is about equal to the apparent difference in the amount of precipitation.

The second paper ("Wald und Niederschlag in Westpreussen und Posen und die Beeinflussung der Regen und Schneemessung durch den Wind," ibid., 1906, No. 11) is a critical study of the effect of wind on the catch of precipitation, especially snow, in gauges.

INFLUENCE OF FORESTS UPON WIND VELOCITY

M. I. ST. MURAT, the new director of the Meteorological Institute of Roumania, has made a study of the retarding effect of forests upon wind velocity (Bucharest, 1907, 4to, pp. 33, pls. 3), which appears in the *Annales* of the Roumanian Academy, Bucharest. The subject is one which has hitherto received practically no attention, at least so far as quantitative measurements are concerned. The results are as follows: The greatest effect which a forest can have upon the wind consists in diminishing the wind velocity to leeward of the forest. At 50 meters (164 feet) this decrease in velocity may amount to 3 to 12 kilometers (4–7½ miles) an hour, which means a reduction of the force of the wind by one degree on the Beaufort scale. This decrease is felt within 100 meters (330 feet) of the forest. After that the velocity increases again with increasing distance, and at about 500 meters (1,640 feet) reaches the force noted before the forest was encountered.

THUNDERSTORMS AND "FALSE CIRRUS"

DR. C. KASSNER has investigated the question of the "false cirrus" and of solar haloes ("Gewitterschirm und Sonnenringe," *Met. Zeitschr.*, July, 1907), with the following result:

1. Solar haloes before and after thunderstorms show that the cirrus veil is an ice cloud.

2. It is therefore wrong and misleading to call these cirrus clouds "false cirrus."

3. The cirrus cloud veil precedes the thunderstorm on the average by as much as four hours, and follows it by about one hour. Hence the average extent is measured by five hours, or, with an average hourly velocity of progression of 25 miles, the distance covered is 125 miles.

CLIMATOLOGY OF SOUTH AFRICA

J. R. SUTTON, meteorologist of the De Beers Consolidated Mines, Kimberley, has published three more papers dealing with the climate of his district. These are (1) "A Contribution to the Study of Evaporation from Water-surfaces" (*Sci. Proc. Roy. Dub. Soc.*, XI., N. S., No. 13, 1907, 137–178); (2) "Variability of Temperature in South Africa," and (3) "The Diurnal Variation of Barometric Pressure" (*Rept. So. Afr. A. A. S.*, 1906, 13–48; 135–142). These papers are all worthy of attention on the part of those interested in the general subjects treated, or in the climatology of South Africa in particular.

THE WEATHER BUREAU

AN account of the various activities of the Weather Bureau in saving life and property is given in an article by Gilbert H. Grosvenor, entitled "Our Heralds of Storm and Flood," published in the *National Geographic Magazine* for September, 1907. This article, which is fully illustrated, originally appeared in the *Century*.

SALT OF MARINE ORIGIN IN THE ATMOSPHERE

A PAPER entitled "Quelle est l'Importance du Transport atmosphérique de Sel marin?" by E. Dubois, published in *Ciel et Terre*, July 16, 1907, is worth noting chiefly because of the bibliographical notes which accompany it.

R. DEC. WARD
HARVARD UNIVERSITY

THE DISTRIBUTION OF RADIUM IN THE ROCKS OF THE SIMPLON TUNNEL[1]

THE principal classes of material which enter into the composition of the massif of the

[1] Read before Section C, British Association for the Advancement of Science, Leicester, 1907.